We claim:

1. A process for preparing a polarizer comprising the step of:
exposing a pre-polarizing article to radiant energy,
said pre-polarizing article comprising:
a uniaxially oriented vinylalcohol polymer film layer, and
an acid donor layer comprising a photoacid generator.

2. The process of claim 1 wherein said pre-polarizing article is further exposed at a temperature sufficient to effect partial dehydration of the vinylalcohol polymer to a poly(vinyl alcohol)/poly(acetylene) copolymer.

3. The process of claim 2 wherein the degree of orientation, and the degree of dehydration to a poly(vinyl alcohol)/poly(acetylene) copolymer, is sufficient to impart a maximum dichroic ratio, R_D, of at least 5.

4. The process of claim 2 wherein the degree of dehydration is 0.1 to 10%.

5. The process of claim 2, further comprising the step of heating said article at 100-200°C.

6. The process of claim 5 wherein said step of heating is subsequent to said step of exposing said polymer film to light.

7. The process of claim 5 wherein said step of heating is concurrent with said step of exposing said polymer film to light.

8. The process of claim 1 wherein said acid donor layer comprises a coating of said photoacid generator on said vinylalcohol polymer film layer.

9. The process of claim 1 wherein said acid donor layer comprises a mixture of said photoacid generator and a polymer having a glass transition temperature of less than 25°C.

10. The process of 1 wherein said acid donor layer comprises a mixture of said photoacid generator and an amorphous polymer.

11. The process of claim 1 wherein said acid donor layer comprises a mixture of said photoacid generator and a hydrophobic polymer.

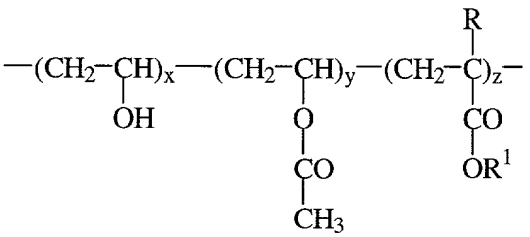
12. The process of claim 9 wherein said donor polymer layer is an adhesive layer.

13. The process of claim 1 wherein said vinylalcohol polymer comprises polymers and copolymers of units of the formula:

(-CH_2-CHOR')-

wherein R is H, a C_1-C_8 alkyl, or an aryl group; and R' is H, or a hydrolysable functional group.

14. The process of claim 13 comprising copolymers of the formula:



where R is hydrogen or methyl;

R^1 is a C_6 –C_{18} acyl group

y is 0 to 30 mole%;

z is 0.5 to 8 mole %; and

x is 70 to 99.5 mole %.

15. The process of claim 1 wherein said vinylalcohol polymer is selected from the group consisting of poly(vinylalcohol), and ethylene/vinyl alcohol copolymers.

16. The process of claim 1 wherein said article further comprises a support layer.

17. The process of claim 16 wherein said support layer is bonded to said oriented, vinylalcohol polymer film layer.

18. The process of claim 16 wherein said support layer is bonded to said donor layer.

19. The process of claim 1 wherein said photoacid generator is selected from the group of onium salts, organometallic salts, organosilanes, latent sulfonic acids halomethyl triazines and chlorinated acetophenones.

20. The process of claim 1 wherein said photoacid generator is used in amounts of 0.1 to 30 wt.%, relative to the amount of vinylalcohol polymer.

21. The process of claim 1 wherein said article comprises a vinylalcohol polymer film layer, a diffusion barrier layer, and said donor layer disposed therebetween.

22. The process of claim 1 wherein said vinylalcohol polymer layer is prepared by solution casting.

23. The process of claim 1 wherein said vinylalcohol polymer layer is prepared by casting from a melt.

24. The process of claim 1 further comprising the step of stabilizing the vinylalcohol polymer with a polybasic acid or derivative thereof.

25. The process of claim 24 comprising the step of contacting the partially dehydrated polymer film with a borate solution to crosslink the vinylalcohol polymer.

26. The process of claim 25 wherein said film is further stretched while contacting with borate solution.

27. The process of claim 1 wherein said radiant energy is imparted to said article in a pre-selected pattern.

28. The process of claim 27 wherein said radiant energy is imparted to said article in a pre-selected pattern by means of a mask.

29. The process of claim 1 wherein said step of exposing said article to radiant energy causes said photoacid generator to release a Bronsted or Lewis acid, said acid diffusing from said donor layer into said vinylalcohol polymer layer.

30. The process of claim 1 wherein said oriented, vinylalcohol polymer film layer has been uniaxially oriented 4 to 7X.

31. A process for preparing a polarizer comprising the steps of:

a. providing an article comprising an oriented, vinylalcohol polymer film;

b. coating a surface of said oriented, vinylalcohol polymer film with a polymer composition comprising a photoacid generator;

c. laminating said donor layer with a barrier layer; and

d. exposing said vinylalcohol polymer film to radiant energy.

32. The process of claim 31 wherein said article of step a) further comprises a support layer bonded to said oriented, vinylalcohol polymer film.

33. The process of claim 1 further comprising the step of stabilizing said vinylalcohol polymer layer by contact with a silylating agent.

34. The process of claim 1 wherein the acid generated by said photoacid generator has a pKa value of ≤ 0.

35. A K-type polarizer comprising at least one layer of an oriented poly(vinyl alcohol)/poly(acetylene) copolymer disposed in a pre-selected pattern.

36. The polarizer of claim 35 wherein said pre-selected pattern comprises regions of vinylalcohol)/poly(acetylene) copolymer contiguous with regions of unconverted vinylalcohol polymer.

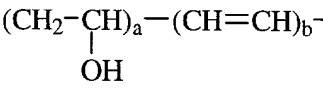
37. The polarizer of claim 35 further comprising an adhesive layer.

38. The polarizer of claim 35 further comprising a support layer.

39. The polarizer of claim 38 wherein said support layer is releasably affixed to said oriented poly(vinyl alcohol)/poly(acetylene) copolymer layer.

40. The polarizer of claim 35 wherein said poly(vinyl alcohol)/poly(acetylene) copolymer is crosslinked by borate.

41. The polarizer of claim 35 wherein said poly(vinyl alcohol)/poly(acetylene) copolymer has the general structure:



where $-(CH_2-CHOH)_a-$ represent blocks of poly(vinyl alcohol), $-(CH=CH)_b-$ represents conjugated blocks of poly(acetylene), a and b are numbers such that a+b is at least 500, a>b, and b is sufficiently large to produce a conjugated chromophore.

42. A K-type polarizer comprising at least one layer of an oriented poly(vinyl alcohol)/poly(acetylene) copolymer and an acid donor layer containing residue from a photoacid generator.

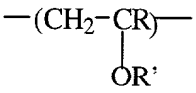
43. The polarizer of claim 42 wherein said acid donor layer comprises a mixture of said residue and a polymer having a glass transition temperature of less than 25°C.

44. The polarizer of claim 42 wherein said acid donor layer comprises a mixture of said residue and an amorphous polymer.

45. The polarizer of claim 42 wherein said donor polymer layer comprises a mixture of said residue and a hydrophobic polymer.

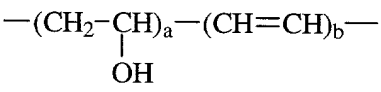
46. The polarizer of claim 43 wherein said donor layer comprises a mixture of said residue and an adhesive.

47. The polarizer of claim 42 wherein said poly(vinyl alcohol)/poly(acetylene) copolymer comprises copolymers of monomers of the formula:



wherein R is H, a C_1-C_8 alkyl, or an aryl group; and R' is H, or a hydrolysable functional group.

48. The polarizer of claim 42 wherein said poly(vinyl alcohol)/poly(acetylene) copolymer has the general structure:



where $-(CH_2-CHOH)_a-$ represent blocks of poly(vinyl alcohol), $-(CH=CH)_b-$ represents conjugated blocks of poly(acetylene), a and b are numbers such that a+b is at least 500, a>b, and b is sufficiently large to produce a conjugated chromophore.

49. A pre-polarizing article comprising:
an oriented vinylalcohol polymer film layer, and
an acid donor layer comprising a photoacid generator.

50. The pre-polarizing article of claim 49 wherein exposure to radiant and thermal energy effects partial dehydration of the vinylalcohol polymer to a poly(vinyl alcohol)/poly(acetylene) copolymer to produce a polarizing article.

51. The article of claim 49 wherein said acid donor layer comprises a coating of said photoacid generator on said vinylalcohol polymer film layer.

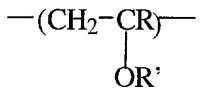
52. The article of claim 49 wherein said acid donor layer comprises mixture of said photoacid generator and a polymer having a glass transition temperature of less than 25°C.

53. The article of claim 49 wherein said acid donor layer comprises mixture of said photoacid generator and an amorphous polymer.

54. The article of claim 49 wherein said acid donor layer comprises mixture of said photoacid generator and a hydrophobic polymer.

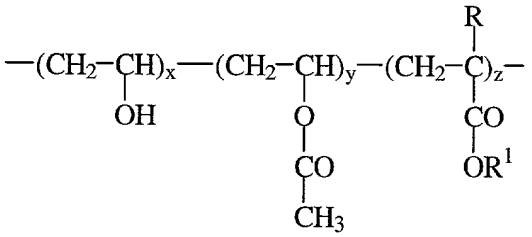
55. The article of claim 52 wherein said donor polymer layer is an adhesive layer.

56. The article of claim 49 wherein said vinylalcohol polymer comprises polymers and copolymers of monomers of the formula:



wherein R is H, a C_1-C_8 alkyl, or an aryl group; and R' is H, or a hydrolysable functional group.

57. The article of claim 56 comprising copolymers of the formula:



where R is hydrogen or methyl;

R^1 is a C_6 –C_{18} acyl group

y is 0 to 30 mole%;

z is 0.5 to 8 mole %; and

x is 70 to 99.5 mole %.

58. The article of claim 49 wherein said vinylalcohol polymer is selected from the group consisting of poly(vinylalcohol), and ethylene/vinyl alcohol copolymers.

59. The article of claim 49 wherein said article further comprises a support layer.

60. The article of claim 59 wherein said support layer is bonded to said oriented, vinylalcohol polymer film layer.

61. The article of claim 59 wherein said support layer is bonded to said donor layer.

62. The article of claim 49 wherein said photoacid generator is selected from the group of onium salts, organometallic salts, organosilanes, latent sulfonic acids halomethyl triazines and chlorinated acetophenones.

63. The article of claim 49 wherein said photoacid generator is used in amounts of 0.1 to 30 wt.%, relative to the amount of vinylalcohol polymer.

64. The article of claim 49 wherein said article comprises a vinylalcohol polymer film layer, a diffusion barrier layer, and said donor layer disposed therebetween.

65. The article of claim 49 wherein said vinylalcohol polymer layer is stabilized with a polybasic acid or derivative thereof.

66. The article of claim 65 wherein said vinylalcohol polymer layer is stabilized with borate.

67. The article of claim 49 comprising first and second oriented, vinylalcohol layers and a donor layer disposed therebetween.

68. The article of claim 67 further comprising a barrier layer on each exposed surface of the oriented vinylalcohol layers.

69. The article of claim 49 comprising alternating layers of oriented vinyl alcohol polymer and donor layer.